

Amendment and Response

Applicant: David J. Arcaro et al.

Serial No.: 10/616,816

Filed: July 10, 2003

Docket No.: 100111670-1

Title: THERMALLY SELF-REGULATING FUSING SYSTEM INCLUDING STATIONARY HEATING ASSEMBLY

IN THE CLAIMS

Please cancel claims 1, 10, 12, and 16 without prejudice.

Please amend claims 2-9, 11, 13-15, and 18 as follows:

1. (Cancelled)
2. (Currently Amended) A system as recited in claim 13, wherein the heating assembly is stationary relative to both rotational and translational motion.
3. (Currently Amended) ~~A system as recited in claim 1~~ A fusing system comprising:
a stationary heating assembly comprising a thermally self-regulating heating element comprising a positive temperature coefficient (PTC) ceramic; and
a pressure roller proximately positioned relative to the heating assembly such that the pressure roller and the heating assembly form a nip area therebetween configured to receive sheet media;
wherein the heating assembly further comprises a fixed covering exposed to the nip area, the fixed covering being compliant and having a low coefficient of sliding friction,
wherein the heating assembly further comprises a flexible polyimide film circuit around the PTC ceramic.
4. (Currently Amended) A system as recited in claim 13, wherein ~~the heating assembly further comprises a~~ the flexible polyimide film circuit is around and in contact with the PTC ceramic, wherein the film circuit is electrically conductive on the side in contact with the PTC ceramic, and electrically insulating on the other side.
5. (Currently Amended) A system as recited in claim 13, wherein the heating assembly further comprises an aluminum extrusion housing the PTC ceramic.
6. (Currently Amended) A system as recited in claim 13, wherein the covering comprises a compliant elastomer having a surface covered by a friction reducing coating.

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7. (Currently Amended) ~~A system as recited in claim 1~~ A fusing system comprising:
a stationary heating assembly comprising a thermally self-regulating heating element
comprising a positive temperature coefficient (PTC) ceramic; and
a pressure roller proximately positioned relative to the heating assembly such that the
pressure roller and the heating assembly form a nip area therebetween configured to receive
sheet media;

wherein the heating assembly further comprises a fixed covering exposed to the nip
area, the fixed covering being compliant and having a low coefficient of sliding friction,
wherein the covering comprises a silicone elastomer.

8. (Currently Amended) A system as recited in claim ~~1~~8, wherein ~~the covering~~
~~comprises a~~ the silicone elastomer is coated with PTFE.

9. (Currently Amended) A thermal transfer overcoat (TTO) device comprising a fusing system comprising:

a stationary heating assembly comprising a thermally self-regulating heating element comprising positive temperature coefficient (PTC) ceramic;

a pressure roller proximately positioned relative to the heating assembly so that they form a nip area therebetween that is configured to receive sheet media;

wherein the heating assembly further comprises a covering exposed to the nip area, the covering being compliant while having a low coefficient of sliding friction,

wherein the heating assembly further comprises a flexible polyimide film circuit
around the PTC ceramic.

10. (Cancelled)

11. (Currently Amended) A system as recited in claim ~~10~~15, further comprising a pressure roller proximately positioned relative to the heating assembly so that they form a nip area therebetween that is configured to receive sheet media.

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12. (Cancelled)

13. (Currently Amended) A system as recited in claim ~~10~~15, wherein the heating assembly is stationary relative to both rotational and translational motion.

14. (Currently Amended) A system as recited in claim ~~10~~15, wherein the thermally self-regulating heating element is comprised of positive temperature coefficient (PTC) ceramic.

15. (Currently Amended) ~~A system as recited in claim 12~~A fusing system comprising a stationary heating assembly comprising a thermally self-regulating heating element, wherein the heating assembly further comprises a compliant elastomer covering that has a low coefficient of sliding friction,
wherein the covering comprises a silicone elastomer coated with PTFE.

16. (Cancelled)

17. (Original) A system as recited in claim 14, wherein the heating assembly further comprises a flexible polyimide film circuit around the PTC ceramic.

18. (Currently Amended) ~~A system as recited in claim 14~~A fusing system comprising a stationary heating assembly comprising a thermally self-regulating heating element, wherein the thermally self-regulating heating element is comprised of positive temperature coefficient (PTC) ceramic,

wherein the heating assembly further comprises a flexible polyimide film circuit around the PTC ceramic, wherein the film circuit is electrically conductive on the side in contact with the PTC ceramic, but electrically insulating on the other side.

19. (Original) A thermal transfer overcoat (TTO) device comprising:
a fusing system comprising:

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a stationary heating assembly comprising a thermally self-regulating heating element composed of positive temperature coefficient (PTC) ceramic;

a pressure roller proximately positioned relative to the heating assembly so that they form a nip area therebetween that is configured to receive sheet media;

wherein the heating assembly further comprises a compliant elastomer covering that has a low coefficient of sliding friction;

a paper feed mechanism configured to feed paper into the nip area;

a TTO film supply roller configured to supply TTO film to the nip area.

20. (Original) A TTO device as recited in claim 19, wherein the heating assembly is stationary relative to both rotational and translational motion.

21. (Previously Presented) A circuit for a thermal transfer overcoat (TTO) device comprising:

an AC power supply;

a paper sensor switch configured to close and complete a circuit with the AC power supply when it senses paper in the TTO device, wherein the completion of the circuit supplies AC power to a fuser system that is configured to heat when power is supplied;

a temperature sensor switch in proximity to the fuser system configured to close when the fuser system has reached a defined operating temperature;

a motor configured to receive AC power when both sensor switches are closed and to pull paper through the fuser system.